

Appl. No. 09/921,364
Reply to Office action of 8/1/2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A particle detection and removal system for wafer fabrication equipment, comprising:

- a sample port for insertion in said wafer fabrication equipment;
- a vacuum source having a vacuum port, wherein a diameter of said sample port is smaller than a diameter of said vacuum port; and
- a particle sensor connected between said vacuum source and said sample port, said particle sensor for detecting a number of particles.

Claim 2 (original): The system of claim 1, further comprising a modulated cleaning system for modulating a vacuum pressure between a first pressure state and a second pressure state.

Claim 3 (original): The system of claim 2, wherein said first pressure state is provided by said vacuum source and the second pressure state is provided by a venturi boost.

Claim 4 (cancelled).

Claim 5 (original): The system of claim 1, wherein said vacuum source comprises a house vacuum.

Claim 6 (original): The system of claim 1, wherein said vacuum source comprises a portable hepa filter vacuum.

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Claim 7 (original): The system of claim 1, further comprising a computing device connected to said particle monitor for displaying a count of particles detected by said particle monitor.

Claim 8 (original): The system of claim 1, wherein said computing device is a personal computer and monitor.

Claim 9 (original): A particle detection and removal system for wafer fabrication equipment, comprising:

- a portable cart;
- a first vacuum hose for connection to a vacuum source;
- a second, smaller diameter, vacuum hose having a cleaning port for connection to the wafer fabrication equipment;
- a particle sensor for detecting a number of particles connected between said first vacuum hose and said second vacuum hose; and
- a display mechanism connected to said particle sensor for repeatedly displaying the number of particles detected.

Claim 10 (original): The system of claim 9, wherein said second vacuum hose has an outside diameter on the order of ½ inch.

Claim 11(original): The system of claim 9, further comprising a modulated cleaning system for modulating a vacuum pressure in said second hose between a first pressure state and a second pressure state.

Claim 12 (original): The system of claim 11, wherein said first pressure state is provided by said vacuum source.

Claim 13 (cancelled).

Claim 14 (cancelled).

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Claim 15 (original): The system of claim 9, wherein said display mechanism is a computer and monitor.

Claim 16 (original): The system of claim 9, wherein said vacuum source comprises a house vacuum.

Claim 17 (original): The system of claim 9, wherein said vacuum source comprises a portable hepa filter vacuum.

Claim 18 (newly presented) A portable particle detection and removal systems for cleaning a process chamber of wafer fabrication equipment comprising:

- a sample port for insertion into said process chamber;
- a vacuum source having a vacuum port, wherein a diameter of said sample port is smaller than a diameter of said vacuum port; and
- a particle sensor connected between said vacuum source and said sample port, said particle sensor for detecting a number of particles.

19. (newly presented) The system of claim 18, further comprising a modulated cleaning system for modulating a vacuum pressure between a first pressure state and a second pressure state.

20. (newly presented) A particle detection and removal system for wafer fabrication equipment, comprising:

- a sample port for insertion in said wafer fabrication equipment;
- a vacuum source having a vacuum port, wherein a diameter of said sample port is smaller than a diameter of said vacuum port;
- a particle sensor connected between said vacuum source and said sample port, said particle sensor for detecting a number of particles; and

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a modulated cleaning system for modulating a vacuum pressure between a first pressure state and a second pressure state, wherein said modulated cleaning system comprises:

- a venturi boost connected between said vacuum source and said particle sensor for providing said second pressure state;

- a first clean dry air (CDA) line;

- a solenoid connected between said CDA line and said venturi boost;

- a controller box connected to said solenoid for controlling a modulation rate and duty cycle.

Claim 21: (newly presented) A particle detection and removal system for wafer fabrication equipment, comprising:

- a portable cart;

- a first vacuum hose for connection to a vacuum source;

- a second, smaller diameter, vacuum hose having a cleaning port for connection to the wafer fabrication equipment;

- a particle sensor for detecting a number of particles connected between said first vacuum hose and said second vacuum hose;

- a display mechanism connected to said particle sensor for repeatedly displaying the number of particles detected; and

- a modulated cleaning system for modulating a vacuum pressure in said second hose between a first pressure state and a second pressure state, wherein said modulated cleaning system comprises:

- a venturi boost connected to said first vacuum hose for providing said second pressure state;

- a first clean dry air (CDA) line;

- a solenoid connected between said CDA line and said venturi boost; and

- a controller box connected to said solenoid for controlling a modulation rate and duty cycle.

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Claim 22 (newly presented) The system of claim 21, further comprising a second CDA line, wherein said venturi boost provides both said first pressure state and said second pressure state.